

Remarks

Drawings. Fig. 3 has been objected to as including a reference numeral 67 not found in the specification. Reference numeral 67 is discussed at page 19 line 9.

Therefore, the Applicants respectfully request that the objection to Fig. 3 be withdrawn.

Fig. 7 has been objected to as failing to include reference numerals 310 and 326, and further for failing to include specification related to reference numeral 30. In response a replacement sheet for Fig. 7 is attached in which reference numeral 30 is amended to 310 and in which reference numeral 326 is added. In view of the revised figure, the Applicants respectfully request that the objections to Fig. 7 be withdrawn.

Specification. Claims 8, 11, 12 and 18 have been rejected for containing a trademark or trade name for the use of the terms JAVA, Ethernet, and internet. None of the cited terms is a trademark or trade name associated with any particular company or source of goods. On the contrary, each of the cited terms is a generic term for a particular technology. JAVA, for example, is a standardized programming language available from a number of sources. Sun, Microsoft, and Hewlett Packard, for example, all provide JAVA programming software. The term ethernet, similarly, refers to a generic type of network which is, in fact, defined in an I.E.E.E. standard. "Ethernet" is therefore not a trademark or a trade name associated with any particular source. The internet, similarly, is not associated with a commercial source, as would be required for the term to be a trademark or trade name. As none of the cited terms are trademarks or trade names, the Applicants respectfully request that the objection to these terms be withdrawn. If the objection is not withdrawn, the Applicants respectfully request that evidence of the single source supplier of these items be provided.

Claim Objections. Claims 13 and 20 have been objected to for various informalities. In response claims 13 and 20 have been amended. In view of the amendments, the Applicants respectfully request that the objection to these claims be withdrawn.

Claim Rejections. Claims 1- 12, 17, 19, and 20 have been rejected under 35 U.S.C. Section 103(a) as unpatentable over US patent number 5,850,548 to Williams in view of U.S. Patent Number 6,718,533 to Schneider.

Williams discloses a computer system having a Visual Development Environment (VDE). The Visual Development Environment includes an interface having a Component Inspector, Component Manager, Component Library, and one or more visual editors. In operation, a user constructs a program by selecting one or more components from the Library, which displays components in a tabbed palette. Using a visual editor of the system, the user may drill-down into the internals of a component, for modifying its logic. Once the functionality of a component is completed, the user may proceed to connect together various components via the component "ports", which allow access to properties of the component. Components of the system may be nested within other components to an arbitrary level. The system described is not for implementation with real time systems, but for development of programs.

Schneider discloses a method for developing and operating a real-time application which uses a composite object group (COG) containing both sampled-data and event-driven capabilities. A program is created on a development station 60 using a visual development tool and is then compiled and downloaded to a real-time computer 64 for execution. Once compiled, the individual compiled components and system diagram files are downloaded over a network connection or other suitable interface to the

real-time computer. The real-time computer then controls electromechanical hardware, and includes a data flow run-time engine that is responsible for executing each data flow component at the proper time and in proper order so as to produce the correct data flow through the system.

Claim 1, as amended, recites an application development system for a medical imaging system which includes a graphic building area. In the graphic building area a user selectively graphically links at least one connection point from a selected component to a connection point of another of the selected components to form a medical imaging application program, which is then serialized and downloaded to the medical imaging system for performing a scan. A component for serializing and downloading an executable application segment to modify the executable program is also provided such that, during the scanning process, the links between components are selectively modifiable in the graphic building area. These segments are serialized and downloaded to the medical imaging system in real time to modify operation of the medical imaging system without the need to download an entire image processing application.

Neither of the cited references teach or suggest a development system for a medical imaging system in which segments of code can be selectively modified and downloaded for execution in real time. Williams neither teaches nor suggests medical imaging systems or any type of real-time control. Williams therefore not only does not, but cannot suggest downloading executable segments of the program to a real-time operational computer. Schneider discusses an object-oriented development system for controlling hardware in real-time. Schneider, however, discusses compiling and downloading an entire program to a real-time computer. Schneider does not disclose or

suggest a method for downloading program segments during real-time to selectively modify operation of the program. Therefore, Williams and Schneider cannot be combined to provide the invention as recited in claim 1, and the Applicants respectfully request that the rejection of claim 1 and associated dependent claim be withdrawn.

Claim 13, as amended, recites a magnetic resonance imaging system including a magnet assembly having a polarizing magnet, a gradient coil assembly, and an RF coil. An application server is coupled to the RF coil and to the gradient coil assembly to drive the gradient coils and the RF coil to perform a magnetic resonance imaging scan. A workstation coupled to the application server for downloading application programs to the pulse sequence server to drive the RF coil and the gradient coil assembly. The workstation includes a graphical application development system for graphically assembling object-oriented components and includes a graphical building area for displaying icons representing components. Responsive to directions from a user entered through an input device, the compounds are selectively graphically linked into application programs. Based on directions from the user, the links can be selectively modified during real time operation to provide modified application program segments and the modified program segments can be downloaded to the application server to modify operation of the medical imaging system in real time.

Again, none of the cited references disclose a medical imaging system. Furthermore, none of the cited references disclose a medical imaging system in which an application program can be changed in real time, and downloaded to a server during a medical imaging application. The Applicants therefore respectfully request that claims 1, 2, 5, 7 – 13, 15, and 16 be allowed.

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New claims 21 – 25 are specifically directed to the application of the invention as recited in the associated parent claims to a data processing pipeline. These claims are supported in the specification between pages 21 and 23, and believed patentable with the parent claims.

No fees are believed necessary. However, if any further fees are required please charge it to Deposit Account 17-0055.

Respectfully submitted,

Josef P. Debbins

By: 

Terri S. Flynn
Quarles & Brady LLP
Reg. No. 41,756
Attorney for Applicant
411 East Wisconsin Avenue
Milwaukee, WI 53202-4497
414/277-5229